

PENROSE (G.H.) *Compliments of the Author*

THE
TREATMENT OF PULMONARY TU-
BERCULOSIS BY CREOSOTE

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THE TREATMENT OF PULMONARY TUBERCULOSIS BY CREOSOTE.¹

THE subject of my remarks to-night is such a momentous one that I cannot attempt to deal with each different phase of the disease, but shall confine myself to the course and results of my experience in the use of creosote in the treatment of tuberculosis.

My attention was first called particularly to the use of creosote in such cases when Von Driver, in the *Berliner Klinische Wochenschrift*, No. 35, 1888, published the results of his cases under this treatment. Before this, however, there had appeared several articles upon the subject. To Bouchard and Gimbert is due the credit of bringing the use of creosote before the profession in cases of tuberculosis.

Beverly Robinson² may be said to be the pioneer of the use of this drug in America, as at this date he began using creosote internally, giving a dessert-spoonful of the United States Pharmacopœial preparation, which represents one minim to the ounce.

In 1885 Professor Robinson, in a clinical lecture at Bellevue Hospital,³ strongly recommended the use of creosote by inhalations, giving the preference to equal parts of creosote and alcohol.

In 1888 Professor Austin Flint⁴ published an article on "Creosote in the Treatment of Phthisis Pulmonalis."

¹ Read before the District Medical Society of Washington, D.C.

² New York MEDICAL RECORD, September 2, 1878, p. 223.

³ New York Medical Journal, November 14, 1885, p. 533.

⁴ Ibid., December 8, 1888, p. 617.

In the ten cases reported the drug was used by inhalation as well as by the stomach, the mixture used for inhalation consisting of equal parts of creosote, alcohol, and spirits of chloroform, of which ten to fifteen minims were placed on a sponge. The treatment was begun with inhalations of fifteen minutes' duration, three to four times daily, and increased until the inhalers were used almost constantly, except at night. This was continued from forty-six to ninety-one days. Dr. Flint's conclusions in these cases were, that in cases of solidification without cavities the effect was a prompt and decided improvement in all phthisical symptoms; in cases with large cavities the treatment seemed to have little more than a palliative influence.

Sommerbrodt, of Breslau,¹ in over five thousand cases, has proven that creosote is not merely a useful drug, but that it exerts a specific effect on the disease by the resistance it affords to the cultivation of tubercle bacilli. The author has given the drug in doses as high as twenty-five minims in the twenty-four hours.

It has thus been shown that creosote has been used for a number of years, but you will notice that in every case the drug has been given in small doses, and each author has feared to push the medicine; or when pushed, it had caused so much nausea that it had been early discontinued.

Having a large number of cases of tuberculosis in the hospital with which I am connected, I have been enabled to study the use of creosote in upward of two hundred cases, and can safely say it is pre-eminently the most satisfactory medicament yet used to ameliorate the distressing symptoms of our tubercular patients. Our method of treatment is as follows: As soon as the patient is admitted he is thoroughly examined and a careful note made of each physical condition, his weight is taken, and a specimen of the sputum is collected the first thing in the morning; this is received into thoroughly cleansed

¹ New York Medical Journal, October 5, 1889, p. 373.

porcelain capsules and sent to the bacteriological laboratory, where it is carefully examined microscopically.

Most of the cases of tuberculosis at the hospital of the United States Soldiers' Home are of the chronic variety, and do not report until the latter stage of the disease has been reached. Many have been so low upon arriving as to be required to be transferred from the ambulance to the ward on a stretcher. As soon as the diagnosis of tuberculosis is made and confirmed by the microscope, the patient is placed upon pure beech-wood creosote, in the form of an emulsion of cod-liver oil and acacia, each drachm of the emulsion containing two minims of creosote; of this a tea-spoonful is administered three times a day for the first week, when it is increased to a tea-spoonful every three hours for another week. By this gradual process the system accustoms itself to the drug; should there, however, appear a tendency to nausea, the patient is directed to lie upon his back for half an hour after taking the medicine, when in every case this tendency has disappeared.

About this time we begin to notice an improvement; the harassing cough decreases, the appetite increases, the patients gain in weight, and the quantity of mucus expectorated is lessened. At this point the quantity of creosote is again increased to three minims to the drachm, and the dose given as before. By this gradual method the quantity of creosote has been increased to six minims eight to ten times a day, thus administering from forty-eight to sixty minims in the twenty-four hours. In almost every case where the drug has been administered as above, the results have surpassed my most sanguine expectations. The appetite returns, the weight increases by as much as from thirty-five to fifty pounds, the cough and expectoration decrease to the minimum, or cease entirely, the hectic flush disappears, temperature becomes normal, the night-sweats become a thing of the past, and the number of bacilli decrease greatly or disappear altogether, as has happened in several cases; the spirits rise

with the gradual improvement, and a feeling of well-being exists.

As to the physical signs : The coarse mucous râles disappear, the breathing loses its bronchial character ; cavities, which were plainly marked before, appear to be lessened in size, and all the signs too well known to be here mentioned show improvement. Yet, in a few cases that have gained in weight, ceased almost entirely to expectorate, and who pronounce themselves as feeling perfectly well, and whose sputum shows a decrease in the number of bacilli, show upon careful physical examination well-marked cavities still existing. Whether or not this be due to the fact that treatment has not been continued long enough, I am not at liberty to express an opinion, nor can I speak positively of the pathological changes which take place, as in but one case has a patient died who had taken the drug long enough to look for marked improvement. In this case, while the edges of the cavity showed unmistakable signs of healthy granulation and contraction, there was not sufficient evidence to say that such changes were due to the drug alone. I hope later to be able to give an opinion based upon researches made in the post-mortem room and the laboratory which will clear these points.

Many authors upon this subject complain of the drug producing such severe nausea that it could not be administered ; this, I think, is due to the fact that the drug was pushed too fast, or that an impure article had been used, for much of the creosote which is sold as such is simply a crude carbolic acid, and is injurious to the system ; the only preparation I use is from the distillation of beech-wood tar prepared by Merck, of Germany, and I do not think too much stress can be laid upon the necessity of using a perfectly pure article. I have induced Mr. Z. D. Gilman, of this city, to procure the proper drug, and he is now prepared to furnish it. It is possible that the objection as to the nausea may be overcome by the use of guaiacol, obtained by the destructive dis-

tillation of guaiac resin or from beech-wood tar, as recommended by Professor Max Schüller.

Another objection is its odor, and many private patients refuse to take it on this account ; but may it not be hoped that this objection may be overcome by combining it with some inert substance to disguise its odor without decreasing its efficacy ? Even should this be accomplished, the odor exhaled by the lungs cannot be disguised.

Concerning its deleterious action on the kidneys, I can only say that I have never noticed any such action, although I have examined many patients' urine.

In cases of laryngeal complications we have been in the habit of using steam inhalations of creosote combined with glycerine, and have found it all that could be wished for.

I think the result of my cases will compare favorably with those of Professor Schüller,¹ although his were among surgical cases, while mine were all medical cases. In his article he has tabulated 100 cases treated with guaiacol, of which there were 70 cured, 16 improved, 10 passed from under observation, and 4 died. I do not consider that the time of treatment has been of sufficient length, nor that sufficient time has elapsed after the treatment was discontinued, to form tables which can be taken as representing the facts in these cases, and hence I have not attempted them.

But the use of creosote has been of such marked benefit in my hands that I think it my duty to place these results before the profession, and my experience has been such as to agree with Professor Sommerbrodt, that the drug must be given in comparatively large doses, such as I have suggested, and continued for a long period of time.

I do not attempt to say that one of my cases has been cured, but I do say that many are now living and earning a livelihood by manual labor, who would have died long since had it not been for the use of this drug. It should

¹ MEDICAL RECORD, January 23, 1892.

also be noticed that in almost every case in which I have used the drug, the disease has been in the latter part of the second or in the third stage, and that we could not look for the same improvement that we might in the earlier course of the disease.

I will not burden you with the histories of any of the cases, as none were marked failures or marked cures, but in each there was marked improvement, and it is because of this gradual improvement that I think we have the more encouragement for continuing the use of creosote in every case of tuberculosis.

In conclusion, I should like to urge the use of creosote in progressive doses, and think that if previous observers had used the drug in larger doses their results would have been better and more decided. I cannot agree with Professor Flint in the assertion that creosote has but little more than a palliative action in cases where cavities exist. In several instances we have noticed decided improvement in such cases.

I do not claim, nor do I think, that we have a specific in creosote, but from careful observation of several hundred cases of this dreadful disease, I do think we have a drug of infinite worth, and, as such, deserving of careful use and more careful study.